FIG. 1

Code detecting means — 101

DCT coefficients reducing means — 102

FIG. 2

Picture type: P-picture
Macro block type: MC, Coded
Relevant block: Y0 block

Code of relevant block input

0000110010000001000100000011110
(31bits)

DCT coefficients reduction

Code of relevant block output from DCT coefficients reducing portion

000011010
(9bits)

VLD (Variable-Length Decoding) reversed zigzag scan

DCT coefficient

```
0 4 2 2 1 0 0 0
2 2 0 1 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

VLD (Variable-Length Decoding) reversed zigzag scan

DCT coefficient

```
0 4 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

FIG. 3

Picture type: P-picture
Macro block type: MC, Coded
Relevant block: Y0 block

Code of relevant block layer input

00101000011001000000100010000000011110

(36bits)

DCT coefficients reduction

Code of relevant block layer output fr... coefficients portion

0010110

(7bits)

VLD (Variable-Length Decoding) zigzag scan

DCT coefficient

```
3 4 2 2 0 1 0 0
2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

VLD (Variable-Length Decoding) zigzag scan

DCT coefficient

```
3 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

FIG. 4

Picture type: P-picture
Macro block type: Intra
Relevant block: Y0 block
DC predicted value of DCT coefficient: 3

Code of relevant block layer input

00000011001000000100010000000011110

(33bits)

DCT coefficients reduction

Code of relevant block layer output from DCT coefficients reducing portion

0010

(4bits)

An actual DC coefficient is 3 (prediction value) + 1 (decoded value) = 4

VLD (Variable-Length Decoding) zigzag scan

DCT coefficient

4 2 2 0 1 0 0
1 2 2 1 0 0 0
2 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0

VLD (Variable-Length Decoding) zigzag scan

DCT coefficient

1 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0
0 0 0 0 0 0 0

FIG. 5

Picture type: P-picture
Macro block type: MC, Coded
Relevant block: Y0 block

Code of relevant block input

00001100100000100010000011110

(31bits)

DCT coefficients reduction

Code of relevant block output from DCT coefficients reducing portion

000011001000001000010010

(24bits)

VLD (Variable-Length Decoding) reversed zigzag scan

DCT coefficient

```
0 4 2 2 0 1 0 0
2 0 0 0 0 0 0 0
2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

VLD (Variable-Length Decoding) reversed zigzag scan

DCT coefficient

```
0 4 2 2 0 0 0 0
2 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
```

FIG. 6

101

Code detecting
means

MBT transcoding
means

DCT coefficients
reducing means

103

102

FIG. 7

101

Code detecting
means

CBP transcoding
means

DCT coefficients
reducing means

104

102

FIG. 8

203 Switching means

201 Bitstream transcoding apparatus according to any one of embodiments 1 - 6

202 Picture tinning-out type bitstream transcoding apparatus

203 Switching means

Selecting signal

FIG. 9

Level 0	Outputs an input bitstream as is
Level 1	leaving as a component only one DCT coefficient encountered first in scanning of Inter MB in B-picture
Level 2	Replaces B-picture with such a B-picture that has zero inter-frame difference information
Level 3	Replaces all B-pictures with such a B-picture that has zero inter-frame difference information and leaves as component only one DCT coefficient encountered first in scanning of Inter MB in P-picture
Level 4	Replaces all B-pictures with such a B-picture that has zero inter-frame difference information and replaces P-picture with such a P-picture that has zero inter-frame difference information
Level 5	Replaces all B-pictures with such a B-picture that has zero inter-frame difference information, replaces all P-pictures with such a P-picture that has zero inter-frame difference information, and replaces I-picture with such an I-picture that has zero inter-frame difference information at a predetermined rate

FIG. 10

Layer structure in bitstream

Layer	Content
1. Sequence layer	Sequence header, GOP, GOP
2. GOP layer	GOP header, I B B P B B P B B P B B
3. Picture layer	picture header, slice slice slice . . .
4. Slice layer	slice header, MB MB MB MB MB MB MB MB MB MB MB MB MB MB MB MB
5. Macro block layer	MacroBlock header, Y0 Y1 Y2 Y3 Cb Cr
6. Block layer	Y0 Y1 Y2 Y3 Cb Cr

Macro block address increment
Macro block type
Quantization scale code
Motion vector
Coded block pattern

FIG. 11

Macro block type (P-picture)

1. MC, Coded
2. No MC, Coded
3. MC, Not Coded
4. Intra
5. MC, Coded, Quant
6. No MC, Coded, Quant
7. Intra, Quant

FIG. 12

Luminance signal (Y)	Chrominance signal (Pb)	Chrominance signal (Pr)

F I G. 13B

Alternate scan

F I G. 13A

Zigzag scan

1	5	7	21	23	37	39	53
2	6	8	22	24	38	40	54
3	9	20	25	35	41	51	55
4	10	19	26	36	42	52	56
11	18	27	31	43	47	57	61
12	17	28	32	44	48	58	62
13	16	29	33	45	49	59	63
14	15	30	34	46	50	60	64

1	2	6	7	15	16	28	29
3	5	8	14	17	27	30	43
4	9	13	18	26	31	42	44
10	12	19	25	32	41	45	54
11	20	24	33	40	46	53	55
21	23	34	39	47	52	56	61
22	35	38	48	51	57	60	62
36	37	49	50	58	59	63	64